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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/679,816	10/06/2003	Robert Bristol	ITL.1023US (P16710)	3390
21906	7590	10/17/2007	EXAMINER	
TROP PRUNER & HU, PC			DUDA, KATHLEEN	
1616 S. VOSS ROAD, SUITE 750			ART UNIT	
HOUSTON, TX 77057-2631			PAPER NUMBER	
			1795	
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No. 10/679,816	Applicant(s) BRISTOL ET AL.	
	Examiner Kathleen Duda	Art Unit 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 29 May 2007 and 25 September 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) 1-40 and 25-40 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 11, 14, 16-20, 23 and 24 is/are rejected.
- 7) ☒ Claim(s) 12, 13, 15, 21 and 22 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>09252007</u> . | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

1. Claims 1-40 are pending in this application.

***Election/Restrictions***

2. Applicant's election of Group I, claims 11-24 in the reply filed on May 29, 2007 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

3. Claims 1-~~10~~ and 25-40 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on May 29, 2007.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claim 11 is rejected under 35 U.S.C. 102(e) as being anticipated by Cheng (US 2003/0008246).

Cheng teaches a method of enhancing resist sensitivity. Claim 11 recites forming a conductive layer over the photoresist and exposing it to an electric field. Figure 2 depicts a resist on a wafer which has metal plates and exposed to an alternating current (see paragraph 0056). Cheng teaches the limitations of claim 11.

6. Claim 20 is rejected under 35 U.S.C. 102(b) as being anticipated by Taravade (US Patent 6,225,215).

Taravade teaches a process of enhancing a photolithographic process using an electric field. The abstract teaches the exposure to the electric field occurs while the photoresist is exposed to radiation. See also Figure 5 and column 3, lines 37-60.

Claim 20 recites exposing a photoresist to an electric field while exposing to radiation which Taravade teaches.

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cheng in view of Yukinobu (US Patent 6,398,985).

The teachings of Cheng have been discussed above. Cheng teaches in paragraph 0057 that other conductive materials besides aluminum plates can be used and depend in the photoresist being used.

Yukinobu teaches a transparent conductive material. This material can be spin-coated onto the substrate (see column 14, lines 14-17).

Therefore, it would have been obvious to one of ordinary skill in the art to have used a conductive layer which could be spin-coated onto a substrate because Cheng teaches conductive materials besides aluminum can be used and Yukinobu teaches that it is known to spin-coat conductive materials onto substrates.

9. Claims 16-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cheng or Taravade (US Patent 6,225,215) in view of

Parlin ("The Torques and Forces Between Short Cylindrical Coils Carrying Alternating Currents of Radio Frequency") or "What is Alternating Current (AC)?".

The teachings of Cheng have been discussed above.

Claim 16 recites that a photoresist is treated with an electric field generated by passing alternating current through a coil.

Cheng is silent on the use of a coil to produce the alternating current. The use of coil is well known in the art as shown by both of the secondary references. Parlin clearly teaches alternating currents of radio frequency – clearly teaching the limitations of claims 16 and 19.

Taravade teaches a process of enhancing a photolithographic process using an electric field. The abstract teaches the exposure to the electric field occurs while the photoresist is exposed to radiation. See also Figure 5 and column 3, lines 37-60.

Claim 17 recites that the coil is arranged so that the photoresist can be exposed. It would have been obvious to one of ordinary skill in the art to design the experiment so that the placement of the coil would not interfere in any part of the process.

Claim 18 recites that the exposure of the photoresist occurs during the exposure to the electric field which is aught by Taravade.

10. Claims 23 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Taravade in view of Parlin.

The teachings of Taravade and Parlin have been discussed above.

Claim 23 recites that the electric field used to expose the photoresist is radio frequency coil.

It would have been obvious to one of ordinary skill in the art to have exposed a photoresist to an electric field using a radio frequency coil because Parlin teaches that such coils are well known in the art in the production of electric fields.

Claim 24 recites exposing the photoresist to extreme ultraviolet radiation.

It would have been obvious to one of ordinary skill in the art to choose a suitable radiation which the chosen photoresist is sensitive to. Exposure of photoresist layers using extreme ultraviolet radiation is well known in the photoresist art.

11. Claims 12, 13, 15, 21 and 22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

12. Any inquiry concerning this communication should be directed to Examiner K. Duda at (571) 272-1383. Official FAX communications should be sent to (571) 273-8300.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff, can be reached at 571-272-1385.

Information regarding the status of an application may be obtained from the Patent Application Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Kathleen Duda  
Primary Examiner  
Art Unit 1795